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PATENT

Response
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application: In Cheol PARK et al.

Serial No.: 09/345,270

GRP ART UNIT: 2871

Filed: June 30, 1999

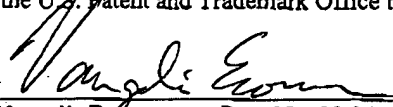
Ex.: Nguyen, D.

For: REFLECTIVE LIQUID CRYSTAL
DISPLAY OF HIGH APERTURE RATIO,
HIGH TRANSMITTANCE AND WIDE
VIEWING ANGLE

EXPEDITED PROCEDURE
RESPONSE AFTER FINAL

Certification under 37 C.F.R. §1.8(b)

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being facsimile transmitted to the U.S. Patent and Trademark Office to Fax No. (703) 308-7382 on July 10, 2002.


Vangelis Economou - Reg. No. 32,341

Commissioner for Patents
Washington, D.C. 20231

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RESPONSE

JUL 10 2002

Sir:

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This is in partial response to the Final Office Action dated July 2, 2002 and having a shortened statutory period for reply set to expire on October 2, 2002.

Applicants respectfully request the reconsideration and withdrawal of the FINAL Rejection Status of this application as a result of the change in emphasis in the enforcement of Office Procedures. Applicants' representative inadvertently overlooked the possibility that the First Office Action could contain a FINAL REJECTION, in view of the Response filed with the RCE on June 18, 2002. Furthermore, it is not considered consistent with efficient prosecution to place a burden on Applicants to file an After Final

Ota et al. (US 5,831,707) and Channin (US 4,385,805). Claims 4, 8, 16 and 20 are further rejected as unpatentable over APA in view of Ota et al., Hiroshi, and Kondo et al. (US 6,124,915). Claims 11-14 are further rejected as unpatentable over APA in view of Ota et al., Hiroshi, and Lee et al. (US 5,886,762). Applicants respectfully disagree with these rejections, and provided a response thereto on March 15, 2002, which included arguments against these rejections. In the Advisory Action dated March 28, 2002, the Patent Office merely states that the arguments provided were not persuasive and that the claims do not define over the art. No reasoning was given as to why the Applicants arguments were not persuasive and did not overcome the rejections.

Applicants have attempted to provide a complete reply to each of the Office Actions so far issued. However, Applicants can not reply to an Action which merely dismisses the Applicants arguments as non-persuasive without any reasoning or counter arguments made on behalf of the Patent Office. Therefore, Applicants herewith submit the arguments previously made and respectfully request that reasons and explanations be provided by the Patent Office, in the interest of the further prosecution of the present application, if these arguments are further rejected.

The present invention as claimed provides a reflective liquid crystal display using a fringe field and characterized in that the electrodes are made of a transparent conductor and the distance between substrates is greater than the distance between the electrodes. In addition, the present invention as claimed is characterized in that a quarter wave plate is sandwiched between a lower substrate and a reflective plate.

Accordingly, in the present invention, both counter and pixel electrodes are made of transparent materials, and the distance between the electrodes is narrower than the cell gap so that a plurality of fringe field are formed. Also, the width of the liquid crystal molecules are formed narrow enough to drive the liquid crystal molecules formed in both sides of the electrodes, thereby driving all liquid crystal molecules in the upper portions of the electrodes.

In contrast, Ota et al. provides an active matrix type liquid crystal display apparatus having a high aperture ratio, which uses the latter display mode and is prevented from generating orientation failure domains.

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Channin provides a liquid crystal lens display system comprising a liquid crystal lens, display elements, a polarizer and a light source.

Hiroshi relates to an IPS (In-Plane-Switching) liquid crystal display that exhibits a wide viewing angle, and which discloses that the distance between two adjacent electrodes 48 and 49 is less than the thickness of the liquid crystal layer.

The technical differences between the present invention and these references is as follows. Ota et al. relates to the active matrix type liquid crystal display apparatus but does not disclose a reflective liquid crystal display using fringe fields and a quarter wave plate sandwiched between a lower substrate and a reflective plate as claimed in the present invention. In addition, Channin and Hiroshi do not teach a reflective liquid crystal display using fringe fields, electrodes made of a transparent material, or quarter wave plate sandwiched between a lower substrate and a reflective plate, as claimed in the present invention.

Accordingly, the present invention as claimed differs from cited patents in view of the applied field of the invention, the use of fringe field, the electrodes made of a transparent material, and the existence of the quarter wave plate sandwiched between a lower substrate and a reflective plate.

Therefore, Applicants consider that the present invention as claimed is not easily conceivable from any of these cited patents or any combination thereof. Applicants therefore consider the rejections overcome.

In light of the foregoing response, all the outstanding objections and rejections have been overcome. Applicants respectfully submit that this application should now be in better condition for allowance and respectfully request favorable consideration.

June 18, 2002
Date

Respectfully submitted,



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